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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
|-----------------|-------------|----------------------|-------------------------|------------------|
| 10/055,098      | 01/22/2002  | Jack C. H. Chung     | 05-01-016 (014208.1489) | 8102             |

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EXAMINER

BOYCE, ANDRE D

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3623

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/055,098 | <b>Applicant(s)</b><br>CHUNG ET AL. |  |
|                              | <b>Examiner</b><br>Andre Boyce       | <b>Art Unit</b><br>3623             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-22 have been examined.

#### ***Specification***

2. The abstract of the disclosure is objected to because it is longer than 150 words.  
Correction is required. See MPEP § 608.01(b).

#### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: thin client "12".
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "118" in figure 2.
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR

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1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 11, 12 and 22 are rendered vague and indefinite for use of the phrase "strongly-connected components." It is unclear what is meant by "strongly-connected." Claims 2-10 and 13-21 are rejected based upon the same rationale, since they are dependent claims.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 5, 9, 11-14, 16, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Meystel et al (USPN 6,102,958).

As per claim 1, Meystel et al disclose a method for integrated decision support (i.e., multiresolutional decision support system 10, column 9, lines 17-21), comprising the steps of: receiving a plurality of decision inputs (i.e., data 16 is input into the system 10, column 9, lines 21-25); converting a first plurality of said received decision inputs to a plurality of graph representations (i.e., multi-valued graph representation, column 16, lines 25-27); converting a second plurality of said received decision inputs to a plurality of mathematical representations (i.e., mathematical abstraction, column 15, lines 57-62); decomposing said converted first plurality of said received decision inputs and said converted second plurality of said received decision inputs to a plurality of sub-problems (i.e., the organizational subsystem 20 organizes information for use by modeling system 22, column 9, lines 37-40); detecting a plurality of strongly-connected components associated with said plurality of subproblems (i.e., modeling subsystem 22 determines functional relationships of the organized data, column 9, lines 40-42); and solving said plurality of sub-problems (i.e., behavior generation subsystem 24 generates control commands, column 9, lines 42-44).

As per claim 2, Meystel et al disclose performing dependency propagation for said plurality of sub-problems; and placing said plurality of sub-problems in at least one predefined order for solution (i.e., developing of a multiresolutional data structure based on associative clusters, which transforms a provisional relational model into a multilevel hierarchical structure, column 10, lines 40-46).

As per claim 3, Meystel et al disclose executing a graph-theoretic algorithm for a plurality of mathematical equations associated with said plurality of strongly-connected components to prevent over-constraining (i.e., hierarchical clustering algorithms, column 16, lines 42-45).

As per claim 5, Meystel et al disclose detecting a plurality of coupled relations (i.e., determination of functional relationships, column 9, lines 40-42).

As per claim 9, Meystel et al disclose said plurality of decision inputs comprises at least one of a plurality of option selection parameters (i.e., monitoring of a plurality of variables of functioning constraints, column 9, lines 26-28); a plurality of equality relation parameters; a plurality of dependency parameters; a plurality of production rule parameters; a plurality of logical relation parameters; a plurality of inequality expression parameters; and a plurality of geometric constraint parameters.

Claim 11 is rejected based upon the same rationale as the rejection of claim 1, since it is the computer-readable medium claim corresponding to the method claim.

Claims 12-14, 16 and 20 are rejected based upon the same rationale as the rejections of claims 1-3, 5 and 9, respectively, since they are the system claims corresponding to the method claims.

Claim 22 is rejected based upon the same rationale as the rejection of claim 1, since it is the system claim corresponding to the method claim.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4, 6-8, 10, 15, 17-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meystel et al (USPN 6,102,958), in view of Johnston et al (USPN 6,826,541).

As per claim 4, Meystel et al does not disclose decomposing said converted first plurality of said received decision inputs and said converted second plurality of said received decision inputs to a plurality of mathematical equations and algebraically solvable graph components. Johnston et al discloses a method for facilitating choices among complex alternatives, wherein a statistical algorithm implemented involves calculation of regression coefficients (column 12, lines 38-42), including matrix analysis (column 14). Both Meystel and Johnston are concerned with improving decision making, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include decomposing received decision inputs to a plurality of mathematical equations and algebraically solvable graph components in Meystel, as seen in Johnston, as tool for making difficult decisions less complex (see Johnston, column 2, lines 21-26), thus making Meystel more effective and robust.

As per claims 6 and 7, Meystel et al does not disclose identifying a plurality of simultaneous equations and solving a plurality of numerical sub-problems and a plurality of algebraic sub-problems. Johnston et al discloses a method for facilitating choices among complex alternatives, wherein a statistical algorithm implemented involves calculation of regression coefficients (column 12, lines 38-42), including matrix analysis (column 14). Both Meystel and Johnston are concerned with improving decision making, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include identifying a plurality of simultaneous equations and solving a plurality of numerical sub-problems and a plurality of algebraic sub-problems in Meystel, as seen in Johnston, as tool for making difficult decisions less complex (see Johnston, column 2, lines 21-26), thus making Meystel more effective and robust.

As per claim 8, Meystel et al disclose solving a plurality of numerical relations subproblems with a numerical solution algorithm (i.e., process of local interpolation, column 18, lines 21-24); and solving a plurality of logical relations subproblems with a logical inference solution algorithm (i.e., learning algorithms implemented by collection and integration of experiences, column 15, lines 62-65). Meystel et al does not disclose solving a plurality of geometric relations subproblems with an algebraic solution algorithm. Johnston et al discloses a method for facilitating choices among complex alternatives, wherein a statistical algorithm implemented involves calculation of regression coefficients (column 12, lines 38-42), including matrix analysis (column 14). Both Meystel and Johnston are concerned with



improving decision making, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include solving a plurality of geometric relations subproblems with an algebraic solution algorithm in Meystel, as seen in Johnston, as tool for making difficult decisions less complex (see Johnston, column 2, lines 21-26), thus making Meystel more effective and robust.

As per claim 10, Meystel et al does not disclose solving a plurality of simultaneous equations with a Newton-Raphson algorithm or Modified Gram-Schmidt algorithm. However, the Newton-Raphson algorithm and Modified Gram-Schmidt algorithms are old and well known in the art, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include Newton-Raphson algorithm or Modified Gram-Schmidt algorithm in Meystel, as an efficient means of solving simultaneous equations, thus making Meystel more efficient and robust.

Claims 15, 17-19 and 21 are rejected based upon the same rationale as the rejections of claims 4, 6-8 and 10, respectively, since they are the system claims corresponding to the method claims.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Ahmed (US 2002/0107824) discloses information systems and expert system theories.

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-Hsiung et al (USPN 6853920) disclose monitoring an industrial process and taking action based on the results.

-Eder (US 2004/0215551) discloses defining, measuring and continuously monitoring the matrix of value and risk.

-Paterson et al (USPN 6983237) disclose conducting a sequence of linked simulation operations.

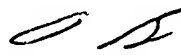
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571) 272-6726. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

adb  
June 10, 2006

  
ANDRE BOYCE  
PATENT EXAMINER  
A.U. 3623